



**NJ Forest Fire
Service**

Wildfire Prevention Education

Lesson Plan # 2 -A

Title/Topic: Fire Triangle

Group Level(s): Group 2
AE: 6 through 8 years old

Skills: Recognize the three items needed in order to allow a fire to burn.

Learning Objective: Students will be able to name and identify fuel, heat, and oxygen as necessary items to allow a fire to burn.

Time: 45 minutes

Materials:

Blackboard
Glass Jar WITH LID (I.e. mayonnaise jar) (OXYGEN)
Candle (a votive or tea light is recommended) (HEAT)
Small ripped pieces of paper (FUEL)
Matches (preferred for demonstration)
Handout "What is Fire?"
INSTRUCTOR to handle the lighter or match.

Procedures:

Draw a triangle on the board
Label each corner of the triangle (FUEL, HEAT, AIR)
Demonstrate the fuel (paper) burning in the jar.

Instructor's Explanation:

Explain how the FUEL is something that will burn (flammable) The Paper is flammable, it will burn. It is the FUEL
Explain the HEAT is warm enough to make the fuel burn (flame of the candle)
Explain the AIR in the jar contains the OXYGEN

Now, COVER jar with lid/cover. What happens? The flame goes out. OXYGEN was removed from the jar. The fire does not continue.



Relight the papers in the jar. (No candle now) Allow them to burn out. Add another match to the burnt papers. What happens? The match burns out. There is no more FUEL to burn. Fire does not continue.

Relight the candle in the jar. Add water. What happens? The fire goes out. There is no more HEAT. Fire does not continue.

Essential Closure Questions to be addressed by Instructor:

Name the three Elements of the Fire Triangle (Fuel, Heat, Oxygen)

True or False: If there is no fuel, fire can still burn.

Give an example of a fuel in a forest. (i.e. trees, pine needles, etc)

NJCCCS:

[Visual and Performing Arts](#)

[Comprehensive Health and Physical Education 2.1;](#)

[Language Arts Literacy 3.3; 3.4; 3.5](#)

[Mathematics](#)

[Science 5.1; 5.6; 5.7; 5.10](#)

[Social Studies](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills 9.2](#)

References/Resources:

Fire Triangle Site www.hantsfire.gov.uk/kids/learn/firetriangle.html



**NJ Forest Fire
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Wildfire Prevention Education

Lesson Plan # 2 - B

Title/Topic: Who are Wildland Firefighters?

Group Level(s): Group 2

AE: 6 though 8 years old

Skills: Become familiar with firefighters.

Learning Objective:

Students will be able to identify the differences and similarities between wildland firefighters and local community/structural fire fighters.



Time: 45 minutes

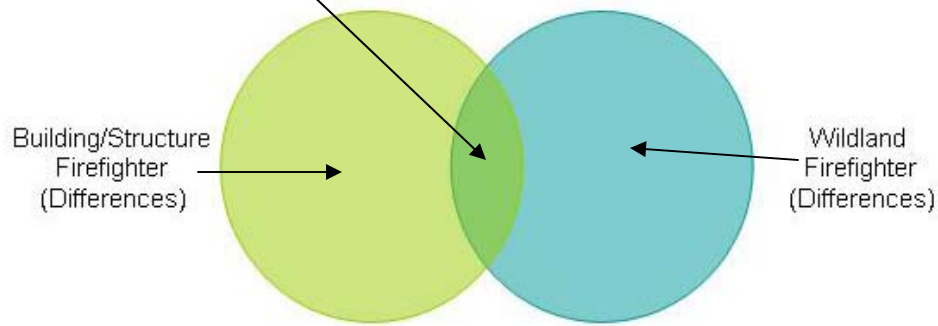
Materials:

- 1. Pictures of local community/structural Firefighters**
- 2. Pictures of Wildland Firefighters**
- 3. (Optional) invite a local Firefighter from the community to visit and/or a visit from a [FOREST FIREWARDEN](#)**
- 4. Two sheets/dittos where local community/structural firefighters are depicted and another where Wildland fire Fighters are depicted.**

Procedures:

- 1. What is a firefighter?**
- 2. Where do fires burn that would need a firefighter to help put it out? (i.e. Home, buildings, outside, forests)**
- 3. Present picture of the two different types of equipment in use by the fire fighters.**
- 4. How are they similar? How are they different? (Best if the fire fighting personnel were present.)**
- 5. Record similarities and differences on board (a Venn Diagram is a suggestion; example below.)**

**Similarities of Both
in Overlap of Circles**



Instructor's Explanation:

Explain to students that a fire in the woods and a fire in a building are both taken care of by firefighters. However, they may look different, and you do not need to be frightened by them.

Essential Closure Questions to be addressed by Instructor:

Name the two different fire fighters. (Forest & Structure)

Why are there two kinds of firefighters? (There are two different kinds of environments – a house is different than a forest!)

What is the same about both types of fire fighters? (Accept any answers that are appropriate. I.e. danger, Fire, need for water and tools.)

NJCCCS:

[Visual and Performing Arts 1.4](#)

[Comprehensive Health and Physical Education](#)

[Language Arts Literacy 3.1; 3.3; 3.4; 3.5;](#)

[Mathematics](#)

[Science](#)

[Social Studies](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills 9.1; 9.2](#)

References/Resources:

Local Fire Department

FOREST FIREWARDEN www.njwildfire.org

Wildland Firefighters



Structural Firefighters



WILDFIRE FIRE EQUIPMENT Worksheet



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____

WORD BANK:

Backfire Torch

Wildland Firefighter

Shovel

Council Tool

Backpack Water Tank

Fire Shelter

WILDFIRE FIRE EQUIPMENT (Answer Key)



1. Wildland Firefighter



2. Fire Shelter



3. Backpack water tank



4. Backfire Torch

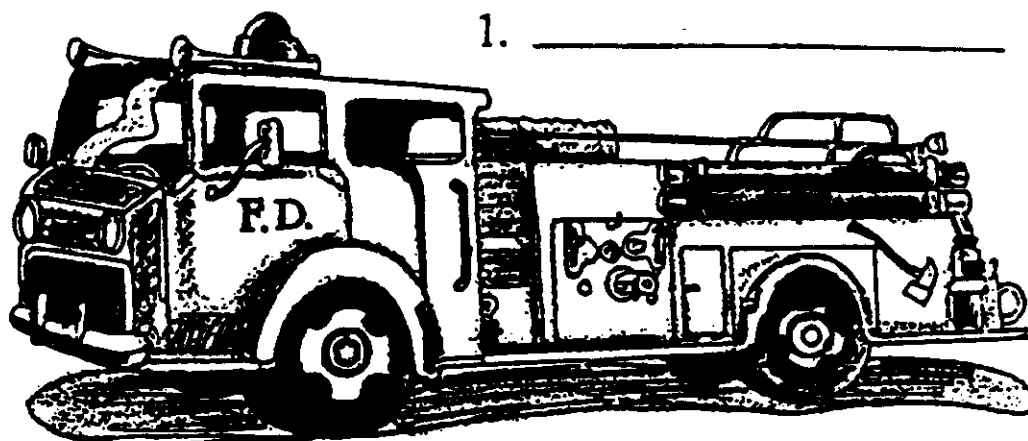


5. Shovel



6. Council Tool

Fire Fighting Equipment

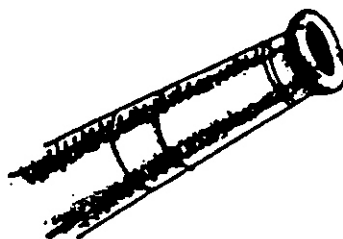


1. _____

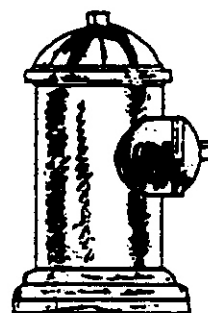
2. _____



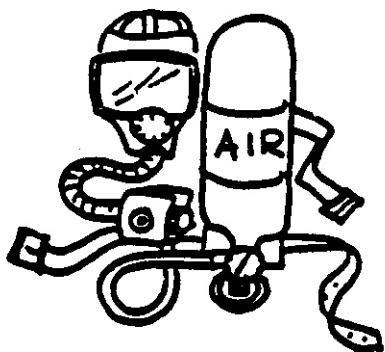
3. _____



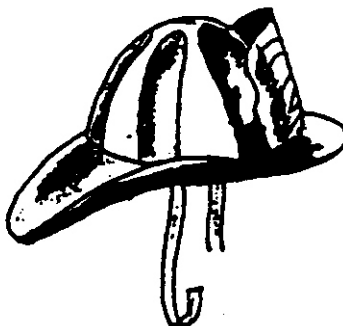
4. _____



5. _____



6. _____



7. _____



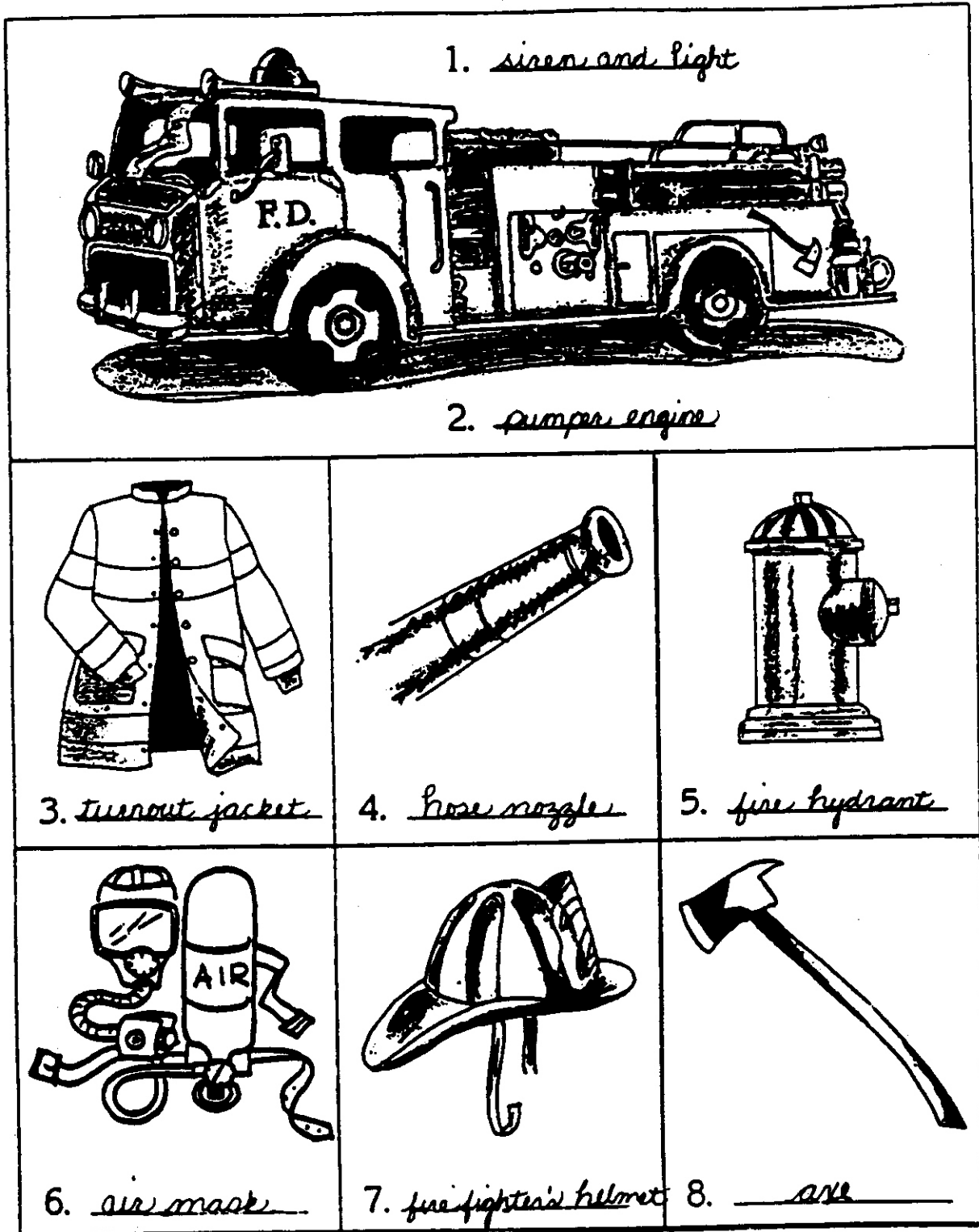
8. _____

axe
fire fighter's helmet
air mask

turnout jacket
pumper engine
hose nozzle

fire hydrant
siren and light

Fire Fighting Equipment



axe
fire fighter's helmet
air mask

turnout jacket
pumper engine
hose nozzle

fire hydrant
siren and light



NJ Forest Fire
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Wildfire Prevention Education

Lesson Plan # 2 - C

Title/Topic: **Smokey Bear**

Group Level(s): Group 2
AE: 6 through 8 years old

Skills: Outdoor Fire Prevention

Learning Objective:

Students will be able to associate Smokey Bear with Wildfire Prevention and name at least two things they can do to help Smokey.

Time: 30 minutes

Materials:

Book of Smokey the Bear (or use the following story)

Story of Smokey Bear Comic Book, Activity Book and Coloring Book

Arrange for a visit from Smokey Bear through your local [FOREST FIREWARDEN](#).

Ditto/Sheet of the song *Smokey the Bear* by Steve Nelson & Jack Rollins

Ditto/Sheet: "Can you help Smokey Find the Match?"

Ditto/Sheet: Coloring activity.

Procedures:

Ask if anyone has heard of Smokey Bear. What is his Message?

Read Story.

Use story to elicit the following information from students:

What might Smokey's home have looked like BEFORE the fire?

What was the weather like?

What might have happened to start the fire?

What happened AFTER the fire?



Instructor's Explanation:

Explain that wildfires can hurt not just the trees, but the plants, animals and possibly human beings that might be in the forest. We MUST be careful with fire in a forest.

Essential Closure Questions to be addressed by Instructor:

Name two things to prevent wild fires. (i.e. Be sure campfires out completely out; never leave a campfire unattended.)

How did Smokey get his name? (The wardens nicknamed him.)

Who is the national symbol of Wildfire Prevention? (Smokey Bear)

NJCCCS:

[Visual and Performing Arts 1.1; 1.4](#)

[Comprehensive Health and Physical Education](#)

[Language Arts Literacy 3.1; 3.2; 3.3; 3.4; 3.5](#)

[Mathematics](#)

[Science 5.5; 5.6; 5.7; 5.8; 5.10](#)

[Social Studies](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills](#)

References/Resources:

New Jersey Department of Parks and Forestry site: <http://www.state.nj.us/dep/parksandforests/>

Smokey Bear Site:

www.SmokeyBear.com

The Story of Smokey Bear Comic Book— available free from the Forest Fire Service

Smokey Bear Coloring Book— available free from the Forest Fire Service

Smokey Bear Activity Book— available free from the Forest Fire Service

C

It was a hot and dry day in May in the Lincoln National Forest in New Mexico. Deer rested under the cool trees. Fish hide along cool stream banks. Sticks and pine needles on the forest floor were so dry they would crackle and crunch when animals or people walked on them.

One day, a person who was visiting the forest was careless with a fire. No one knows if he or she dropped a lit match, or left his campfire burning, or forgot to crush out a cigarette, but everyone knows what DID happen next. The little spark, caused by ONE person, quickly became a HUGE WILDFIRE.

The animals, birds, and fish tried to escape the fire. Some could not escape, even in the streams, fish choked on ash from the fire. Many fire fighters worked for five days to put the wildfire out.

When the fire was finally out, the fire fighters found a frightened bear cub clinging to a burned tree. Bits of the cub's fur and his paws had been burned in the fire. The fire fighters took care of the bear cub until his injuries were all healed. They named the bear, "Smokey."

Smokey Bear became the living symbol of wildfire prevention. With the help of his Firewardens, He travels around the country, telling boys and girls how they can help prevent wildfires.



ONLY YOU CAN PREVENT WILDFIRES.

www.smokeybear.com



**NJ Forest Fire
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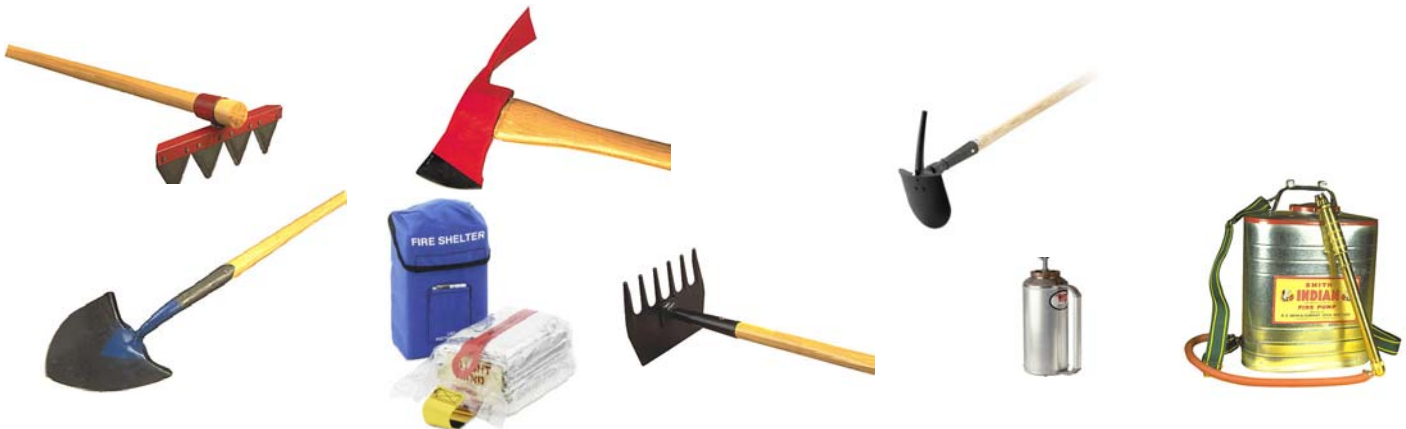
Wildfire Prevention Education

Lesson Plan # 2 - D

Title/Topic: Wildland Firefighters and their Equipment

Group Level(s): Group 2
AE: 6 through 8 years old

Skills: Recognize Wild Fire Fighters' Tools



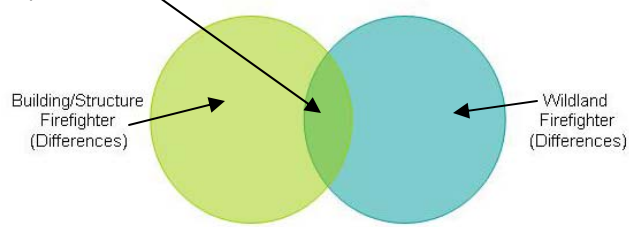
Learning Objective: Students will be able to name at least three Wildland firefighting tools that are used when fighting a wildfire.

Time: 20 – 30 minutes

Materials:

- 1. Hand out pictures of Wildland Firefighters with some of their Tools.**
 - a. Cutting Tools**
 - b. Scraping Tools**
 - c. Vehicles**
- 2. If Possible, invite wildland firefighters to the classroom.**
- 3. Sheet/Ditto: "The Wildfire"**
- 4. Sheet/Ditto: Cutting Tools/Scraping Tools**
- 5. Sheet/Ditto: Firefighting Equipment (with answer sheet)**
- 6. If time, use the Venn Diagram of Lesson 2-B, to compare and contrast the wildland fire-fighter tools with the structure fire fighters tools.**

Similarities of Tools in Overlap of Circles



Ven Diagram

Procedures:

Typical Structure fires are generally fought the same way as forest fighters – HOWEVER, how do you get a large fire truck into the forest? Well, you need to have a smaller truck, and many different types of tools. The Wildland fire fighter usually travels by foot to get deep into the woods to start controlling a wildfire.

In a wildfire, there is a need to remove one of the elements of the FIRE TRIANGLE (Lesson 2-A)

How do you remove the fuel in a Wildfire? (Remove the brush/pine needles/and other flammable fuels.)

How can you remove the Heat? (Water – use of fire hose deep in the forest.)

Instructor's Explanation:

In order for Wildland Firefighters to put out a wildfire, they remove one of the three parts of the Fire Triangle. They use special tools, vehicles, and water to remove either the fire/heat; air/oxygen; fuel/needles; leaves; trees; branches; etc.

Tools can be Cutting Tools

(to actually cut down trees/branches or logs)

Brush Hook	Double Bit Axe
Single Bit Axe	Pulaski
Brush Hook	Sanvik

Other Tools can be Scraping Tools

(to scrape into the earth to remove the fuels and expose dirt – making a FIRE LINE)

Shovel	McLeod
Fire Rake	Adze
Council Fire Rake	Wire Broom

Essential Closure Questions to be addressed by Instructor:

Why can't a fire engine be enough for a wildfire? It has a ladder to reach the high trees?! (It is not good for the forest as there are no paved roads. Special trucks/vehicles are necessary.)

Name three tools to use in a wildfire. (Accept any of the ones explained)

If you remove one part of the fire triangle when putting out a wild fire, are you on your way in putting out the wildfire? (yes or no)

NJCCCS:

Visual and Performing Arts

Comprehensive Health and Physical Education 2.1

Language Arts Literacy 3.1;3.2; 3.3; 3.4; 3.5

Mathematics 4.5

Science 5.1; 5.3; 5.4; 5.5; 5.7; 5.8; 5.10

Social Studies

World Languages

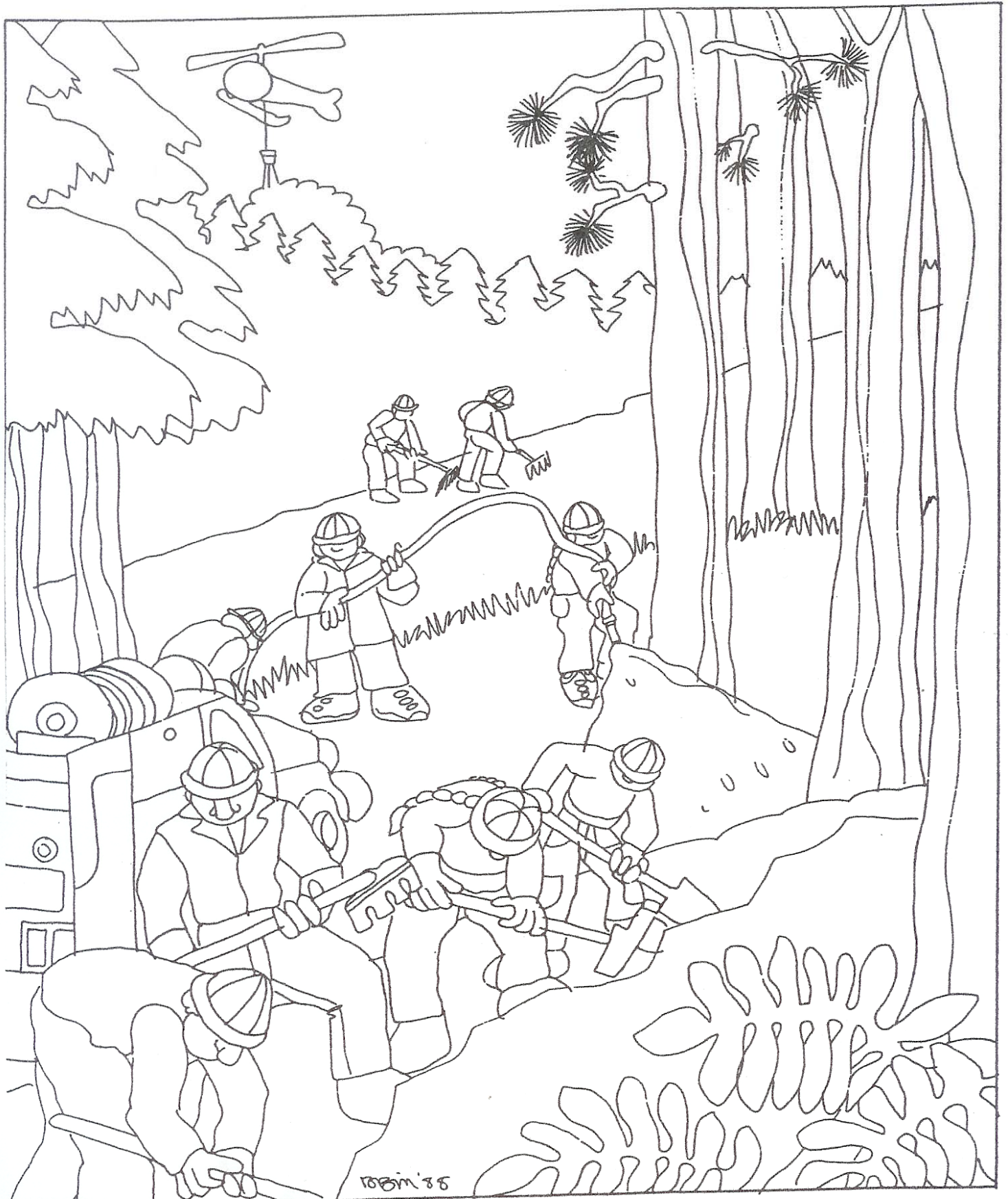
Technological Literacy

Career Education and Consumer, Family and Life Skills

References/Resources:

Wildland Firefighters www.smokeybear.com/frontline.asp

The Forest Fire





**NJ Forest Fire
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Lesson Plan # 2 - E

Title/Topic: Smoke Danger

Group Level(s): Group 2
AE: 6 through 8 years old

Skills: Recognize the hazards of the smoke from a wildfire.

Learning Objective:

Student will be able to learn how smoke from a fire can affect their body after a demonstration.

Time: 30 to 40 minutes

Materials:

- 1. Mayonnaise Jar (glass) with a lid.**
- 2. Small candle (votive or tea light)**
- 3. Diagram of respiratory system (if desired click link) http://www.edhelper.com/teachers/health_Respiratory_System_with_Labels.htm**

Procedures:

- 1. Place candle in a jar.**
- 2. Light the candle.**
- 3. Partially cover jar with lid (Observe how the smoke forms and circulates in the jar).**
- 4. Ask students what they see (smoke is rising to the top of the jar to escape out partial opening).**

Instructor's Explanation:

Students will share what they observe in the jar. Ask students to think of the jar as their bed room. Where is the safest place to be? (Down low near the floor.) Identify what Carbon Monoxide is.

carbon monoxide n : an odorless very poisonous gas that is a product of incomplete combustion of carbon [syn: [carbon monoxide gas](#), [CO](#)]

[Source:](#) Merriam-Webster's Medical Dictionary, © 2002 Merriam-Webster, Inc.

List all of the parts of the body that can be affected by smoke (smoke inhalation)

- 1. Eyes (can't see)**
- 2. Nose (can't breathe)**
- 3. Mouth (can't breathe)**
- 4. Lungs (can't breathe; the heat of fire can also burn tissues in the lungs and cause damage)**
- 5. Throat (excessive coughing; burn the throat; damage tissues; burn or swell up making it difficult to breathe.)**

Outdoors, a person can be seriously hurt by inhaling too much smoke (smoke inhalation). You must STAY LOW to the ground and crawl.

Essential Closure Questions to be addressed by Instructor:

- 1. Can smoke be deadly? Why/Why Not? (Yes, it can hurt your respiratory system and make it difficult for you to breathe, and possibly die.)**
- 2. How can you avoid too much smoke inhalation during a fire? (Cover your mouth if possible, and stay low to the ground.)**
- 3. Does smoke rise or stay low to the ground? (Rise)**

PARENT INVOLVEMENT:

- 1. Parents are to research with their child smoke damage that has been caused by fire and report on it to the instructor. (LOCAL Fires)**
- 2. The report is to be at least 1 ½ pages long with references.**
- 3. Should writing be a problem for the child, an oral presentation of what was researched is to be presented to the instructor.**

NJCCCS:

[Visual and Performing Arts 1.4](#)
[Comprehensive Health and Physical Education 2.1; 2.2;](#)
[Language Arts Literacy 3.4](#)
[Mathematics 4.3; 4.5](#)
[Science 5.1; 5.2; 5.3; 5.6; 5.7; 5.8; 5.10](#)
[Social Studies](#)
[World Languages](#)
[Technological Literacy](#)
[Career Education and Consumer, Family and Life Skills](#)

References/Resources:

www.Edhelper.com
Merriam-Webster's Medical Dictionary, © 2002



**NJ Forest Fire
Service**

Wildfire Prevention Education

Lesson Plan # 2 -F

Title/Topic: What I can't see might hurt me!

Group Level(s): Group 2
AE: 6 through 8 years old

Skills: Recognize that vapors are flammable.

Learning Objective: Students will be able to define the word flammable and identify a flammable liquid.



Time: 30 minutes

Materials:

- 1. Writing Surface (blackboard)**
- 2. Identify items that are flammable in the house.**

Procedures:

- 1. Record and define the word FLAMMABLE on the board. (Something that will catch fire easily)**
- 2. Ask students to recall a time a parents or grandparent baked chocolate chip cookies. Did you have to see the cookies to know they were baked? No, you smelled them. The scent you smelled is a VAPOR. That vapor you smelled indicated that chocolate chip cookies were baked. You could not see it or touch it, but that smell is a VAPOR.**

Instructor's Explanation:

- 1. Explain that the cookies were a good vapor. There are some vapors that are bad and they can become FLAMMABLE. For example, at a gas station, you can smell the gas when your car is being filled. That smell IS FLAMMABLE. You cannot smoke or light a match – at some places you cannot use a cell phone due to electric charges. All flammable liquids have flammable vapors. Read the labels of products.**
- 2. List flammable vapors.**

Essential Closure Questions to be addressed by Instructor:

- 1. What is a vapor? (A scent/smell something gives off.)**
- 2. T or F IF a liquid is flammable, its vapor is not. (F)**
- 3. Name liquids that are flammable. (Gasoline, rubber cement, nail polish, alcohol, turpentine, and other acceptable liquids.)**

NJCCCS:

[Visual and Performing Arts](#)

[Comprehensive Health and Physical Education 2.1; 2.2; 2.3;](#)

[Language Arts Literacy 3.1; 3.2; 3.4; 3.5](#)

[Mathematics](#)

[Science 5.1; 5.6; 5.7; 5.8; 5.10](#)

[Social Studies](#)

[World Languages](#)

[Technological Literacy](#)

[Career Education and Consumer, Family and Life Skills](#) 9.2

References/Resources: